# Technology Fact Sheet

## Complex Wide Deployment of the Personal Ice Cooling System (Cool Suit) and the Oxy-Gasoline Torch

Ohio Field Office/Fernald Environmental Management Project
In Partnership with the Office of Science & Technology

### Introduction

The Fernald Environmental Management Project is a U.S. Department of Energy (DOE) closure site currently undergoing Decontamination and Decommissioning (D&D) activities. Fernald produced high-grade uranium metal products for the nation's defense program until 1989, when the site's focus shifted to environmental remediation.

This Fernald Accelerated Site Technology Deployment (ASTD) Project developed and implemented "The Fernald Approach" to deploy proven (safer, faster, and/or lower cost) technologies to end-users at other DOE Sites and training institutions.

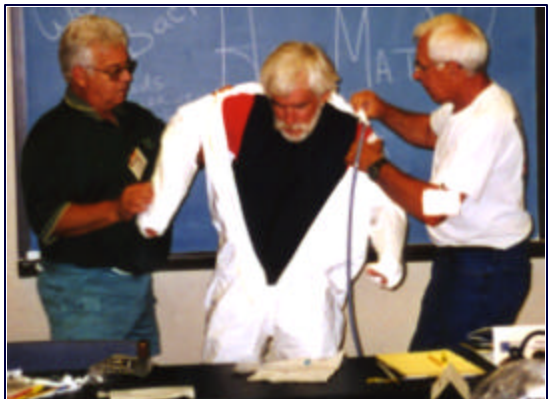
The Personal Ice Cooling System (PICS) and oxy-gasoline torch were successfully demonstrated at Fernald as part of the Plant 1 Large Scale Demonstration and Deployment Project. Fernald recognized the ability of these technologies to expedite and lower the cost of D&D work and developed the Fernald ASTD Project to facilitate their deployment to other DOE Sites and training institutions.

### Technology Need

The DOE has sponsored many demonstrations of new and innovative technologies; however, even after successful demonstrations, deployment often remains a challenge. D&D project managers and contractors are reluctant to use new technologies. Contractors on firm, fixed-price contracts are wary of unfamiliar technologies and methods. Many contractors and project managers have not had the opportunity to review the documenting information produced for new technologies, such as fact sheets, videos, or Innovative Technology Summary Reports. Lastly, managers and technology end-users generally want to see, touch, and work with a technology to determine whether it meets their needs before they risk making a change to their baseline. These factors often act as barriers to the deployment of new or innovative technologies.

### Project Description

This Fernald ASTD Project pioneered the Fernald approach to facilitate the deployment of proven technologies to end users at other DOE Sites and training institutions.



Hands-on demonstration of Personal Ice Cooling System during a Fernald technology transfer session.

The Fernald approach seeks out the true end-users and their supervisors/managers, involves them in hands-on technology demonstrations, provides them with technology-specific training, connects them directly with the technology vendor, and furnishes them with technology seed units at no "risk".

This integrated approach addresses each of the major barriers to deployment. It lowers risk by allowing end-users to determine first-hand if a technology fits their needs. Hands-on training sessions provide valuable, technology-specific information superior to that found in published documents or videos. Technology vendors were present to communicate directly with the end-users. Lastly, seed units were provided to the end-users based on the following logic: the technology will, if used, pay for itself and the user will soon realize the benefits of the technology and will make the technology the baseline.

D&D Focus Area

To continue deployments of these technologies after this project is completed, training institutions (vocational schools, universities, training centers, trade unions, etc.) were partners in this project. These institutions train the D&D workers of today and tomorrow. If these workers are educated to safer, better, faster and less expensive technologies, they will promote the use of these technologies when working at DOE sites.

Torch users from the DOE Portsmouth Gaseous Diffusion Plant "test drive" the Oxy-Gasoline Torch at their facility.

**Benefits**

Fernald's visionary approach to technology deployment (hand-on training and seed units to the end-user) benefited project supervisors/managers and the end-users throughout the DOE complex and beyond. Participants of technology transfer sessions were able to experience first-hand the superiority of the PICS and oxy-gasoline torch over baseline methods of heat stress control and steel segmentation. More than 230 PICS units have been deployed as a result of this project. Over 270 Oxy-Gasoline Torches have been deployed. These deployments are a combination of seed units, provided by this project and follow-up purchases by the DOE Sites, Nuclear Industry, Commercial Industry and Training Institutions. The DOE Sites (18) include: Sandia National Laboratory, Los Alamos National Laboratory, Rocky Flats Environmental Technology Site, Pantex Plant, Nevada Test Site, Hanford Richland Field Office, Oak Ridge Field Office, Savannah River Site, Paducah Gaseous Diffusion Plant, Mound Environmental Management Project, Fernald Environmental Management Project, Carlsbad Area Office, Lawrence Livermore National Laboratory, Ashtabula Environmental Management Project, Portsmouth Gaseous Diffusion Plant, West Valley Demonstration Project, Argonne National Laboratory and Columbus Environmental Management Project

A testament to the benefit/success of this ASTD Project is the fact that well over half of the deployment sites have subsequently purchased additional PICS and/or oxy-gasoline torch units. Such extensive and rapid acceptance of the two technologies would not have been possible if end-users had not been provided a risk-free introduction to the technology through the Fernald technology transfer program. The technology vendors benefited from the exposure of their technology directly to the true end-users. Most importantly, the deployment sites and their workers gained new technologies that make D&D work safer, less expensive and require less time.

**Status**

The Fernald Technology Deployment Project is complete. Even with the completion of this project, the technology transfer and subsequent deployments continue. The training institutions that partnered with the project continue to introduce and train new people on the technologies. In February 2001, the Center to Protect Workers Rights plans to train 20 people at Los Alamos on the PICS technology. The National Iron Workers Union is training hundreds of their members a year on the Oxy-Gasoline Torch.

**For more information about this project, please contact:**
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